

REMARKS

Favorable reconsideration is respectfully requested.

The claims are 1 to 5.

Claims 1 to 5 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ishii et al. (U.S. 5,368,921).

This rejection is respectfully traversed.

The glass woven fabric used in the present invention has a thickness of 25 to 150 μm , a weight of 15 to 165 g/m^2 and a gas permeability of 1 to 20 $\text{cm}^3/\text{cm}^2/\text{sec}$.

Ishii et al. (US 5,368,921), in contrast, merely discloses the use of "plain weave glass fabric having a thickness of 0.18 mm (180 μm)" in Example 1 thereof and has no description of other properties.

All of the glass woven fabrics used in the Examples and Comparative Examples of the present specification were twilled glass woven fabrics. These twilled glass woven fabrics had the following properties:

	Example 1	Example 2	Comparative Example 1	Comparative Example 2
Thickness	40	130	50	100
Weight g/cm^2	27	136	48	105
Gas permeability $\text{cm}^3/\text{cm}^2/\text{sec}$.	19	3	180	28

Table 1 on page 19 of the present specification shows the kinds of glass woven fabrics defined in IPC4412 (The Institute for Interconnecting and Packaging Electronic Circuits).

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Table 1

Style	Thickness (micron)	Weight (g/cm ²)	Gas permeability (cm ³ /cm ² /sec.)
			US 5,368,921 IPC-4412
106	33	24.4	250
1,078	43	47.8	211
1,080	53	46.8	180
2,165	101	121.4	114
1,500	149	164.1	78

As shown above, in general, glass woven fabrics, including those of Ishii et al. have a gas permeability larger than that of the present invention.

Ishii et al. has no specific description of the glass woven fabrics therein. Therefore, it is reasonable to assume that Ishii et al. uses a conventional glass woven fabric.

The Experimental Report of the attached Rule 132 Declaration of N. Ikeguchi, the third named inventor herein, compares the varnish impregnation properties and properties of produced double-side copper-clad laminates for the glass woven fabric of the present invention and the conventionally used glass woven fabric, i.e. glass woven fabric used in the invention of Ishii. The glass woven fabric specified in the present invention was excellent in the impregnation properties of varnish and the laminate thereof had no voids and was in good condition.

In comparison to the glass woven fabric used by Ishii et al., i.e. the glass woven fabric used in the Comparative Examples of the present specification, the glass woven fabric specified by the present invention had the following advantages.

a. Surface roughness:

In the case of the present invention, the copper-clad laminate has a small surface roughness and the occurrence rate of defective laminates at the time of forming fine patterns is small.

b. Modulus of rigidity (elasticity):

In the case of the present invention, a copper-clad laminate prepared by using the glass woven fabric of the present invention has a high modulus of rigidity (elasticity) and, when it is used to produce a printed wiring board having a small thickness such as CSP, workability is excellent.

c. Hole processability:

In the case of the present invention, the glass woven fabric is clogged as shown in Photograph 2 of the Declaration. For this reason, when holes were made with a carbon dioxide gas laser, almost no roughness was found in the cross-sectional shapes of the holes, as shown in Declaration Photograph 3 (Example 1 of the present specification) and Declaration Photograph 4 (Example 2 of the present specification). On the contrary, in the case of using the general or conventional glass woven fabric, the glass woven fabric has a clogged state as shown in Declaration Photograph 1. When holes were made with a carbon dioxide gas laser, remarkable roughness was found in the cross-sectional shapes of the holes, as shown in Declaration Photograph 5 (Comparative Example 1 of the present specification) and Photograph 6 (Comparative Example 2 of the present specification). The roughness on the wall of the hole is apt to cause failures in plating adherence.

For the foregoing reasons, it is apparent that the rejections on Ishii et al. are untenable and should be withdrawn.

No further issues remaining, allowance of this application is respectfully requested.

If Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

Morio GAKU et al.

By: Matthew Jacob
Matthew Jacob
Registration No. 25,154
Attorney for Applicant

MJ/rcc
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
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